



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,973	02/28/2002	Jack Kelly	KSU.P0232	1213

7590 02/18/2004

Ray L. Weber, Esq.
Renner, Kenner, Greive, Bobak, Taylor & Weber
First National Tower - 4th Floor
Akron, OH 44308-1456

EXAMINER

WANG, GEORGE Y

ART UNIT	PAPER NUMBER
----------	--------------

2871

DATE MAILED: 02/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Kit

Office Action Summary	Application No.	Applicant(s)	
	10/085,973	KELLY ET AL.	
	Examiner	Art Unit	
	George Y. Wang	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 November 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1 and 3-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winker et al. (U.S. Patent No. 5,504,603, from hereinafter "Winker") in view of Yeh et al. (U.S. Patent No. 5,196,953, from hereinafter "Yeh"), and in further view of Nakamura (U.S. Patent No. 5,568,290).

Art Unit: 2871

3. Regarding claims 1 and 6, Winker discloses a liquid crystal display (LCD) with a liquid crystal cell (fig. 2, ref. 226) with a twisted nematic (TN) mode (abstract) and a first compensation layer (fig. 2, ref. 250) on one side of the TN cell with an elliptically polarizing plate containing a polarizer (fig. 2, ref. 222), a first and second optical anisotropic layer having positive refractive index anisotropy and where the first and second optical axis anisotropy are tilted.

However, the reference fails to specifically disclose anisotropic layers with positive and negative refractive index anisotropy and tilted optical anisotropy.

Yeh discloses an LCD with an elliptically polarizing plate having layers with positive and negative optical axis anisotropy (abstract).

Nakamura discloses anisotropic layers with tilted optical anisotropy (col. 8, lines 28-46).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have anisotropic layers with positive and negative refractive index anisotropy since one would be motivated to compensate for phase retardation and improving the viewing contrast and color rendition at oblique viewing angles (Yeh, col. 2, lines 3-8). Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have anisotropic layers with tilted optical anisotropy since one would be motivated to improve durability under stressful conditions such as high temperature and humidity, and is greatly improved in coloring and high contrast when viewed from an angle (Nakamura, col. 3, lines 34-51).

4. As to claim 3, Winker discloses an elliptical polarizing plate as recited above where the tilt directions of the optical axis of the optical anisotropic layers are configured orthogonally to each other (col. 5, lines 3-20).

5. Regarding claims 4-5, Winker disclose an elliptical polarizing plate as recited above, however the reference fails to specifically teach a first optical anisotropic layer made of nematic liquid crystal molecules and the second optical anisotropic layer made of discotic liquid crystal molecules.

Nakamura discloses an elliptical polarizing plate with a first optical anisotropic layer made of nematic liquid crystal molecules (fig. 5, ref. 57) and the second optical anisotropic layer made of discotic liquid crystal molecules (fig. 1, ref. 13).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included an elliptical polarizing plate with a first optical anisotropic layer made of nematic liquid crystal molecules and the second optical anisotropic layer made of discotic liquid crystal molecules since one would be motivated to provide a liquid crystal cell with improved durability under stressful conditions, such as high temperature and humidity and improved coloring even at severe viewing angles (col. 5, lines 6-19).

6. As per claim 7, Winker discloses an LCD as recited above with a second compensation layer (fig. 2, ref. 252) on the side of the liquid crystal opposite the first compensation layer.

7. Regarding claims 8-11, Winker et al. discloses and LCD as recited above having compensation layers with index of refraction relationships of $n_x > n_y = n_z$ (Yeh, col. 2, lines 31-57), $n_x = n_y > n_z$ (Yeh, col. 2, lines 31-57), $n_x < n_y = n_z$ (Nakamura, col. 16, line 15), and $n_x > n_y > n_z$ (Nakamura, col. 16, line 7).

8. Claims 2 and 12-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winker, Yeh, and Nakamura, in view of Cobb, Jr. et al. (U.S. Patent No. 5,825,542, from hereinafter "Cobb").

9. As per claims 2, 12, and 21, Winker et al. disclose the LCD as recited above, however, the references fail to specifically disclose a polarizer and optical layers that are laminated.

Cobb discloses polarizing layers that are laminated (col. 3, lines 35-41).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have laminated the optical layers since one would be motivated to provide protection and alterability of optical properties on these layers if necessary, such as index of refraction, reflective, and transmissive characteristics.

10. Regarding claims 13-18, Winker et al. discloses an elliptical polarizing plate and with an average first and second optical anisotropic tilt angle of 50° (fig. 3).

Art Unit: 2871

11. As to claims 19-20, Winker discloses an elliptical polarizing plate as recited above where the tilt directions of the optical axis of the optical anisotropic layers are configured orthogonally to each other (col. 5, lines 3-20).

12. As per claim 22, Winker discloses an elliptical polarizing plate as recited above with a compensation layer (fig. 2, ref. 252) on the side of the liquid crystal.

13. Regarding claim 23, Winker discloses an elliptical polarizing plate as recited above, however, the reference fails to specifically disclose a reflective layer.

Cobb discloses a polarizing plate having a reflective layer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a reflective layer since one would be motivated to diffusely reflect light of one polarization which diffusely transmitting light on another (abstract). This provides a low percentage of depolarization and backscatter (col. 1, lines 55-60) and is therefore useful in either a reflective or transfective mode, in frontlit or in backlit displays (col. 2, lines 8-16).

Response to Arguments

14. Applicant's arguments filed November 12, 2003 have been fully considered but they are not persuasive.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that

Art Unit: 2871

any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Furthermore, Applicant argues that Nakamura's motivation to improve display durability and to improve coloring and high contrast when viewed from wide viewing angles is faulty because "tilted anisotropy has nothing to do with stress environmental conditions." However, Applicant's argument is unsupported and does not offer any evidence for this assertion. In addition, Applicant says that the "Fuji invention" hopes to achieve improved life along with enhancement of the viewing angle. Not only is it unclear what the "Fuji invention" is, as it is mentioned several times, it does not offer any support for Applicant's assertion that such a combination is frivolous or based on hindsight.

Therefore, Examiner holds to the validity of the references used and maintains rejection.

Conclusion

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Y. Wang whose telephone number is 571-272-2304. The examiner can normally be reached on M-F, 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1562.

gw
January 29, 2004

TOANTON
PRIMARY EXAMINER